

Amendments to the Claims:

1. (Currently Amended) A method for matching a published event with one or more subscribers in a content-based publish-subscribe system in a computer network, each subscriber having one or more predetermined predicates, the method comprising:
 - creating a virtual Direct Acyclic Graph (DAG) including one or more arbitrary boolean tests representing the predetermined predicates;
 - eliminating, upon publishing the event, one or more subscribers, at least one of whose predicates is not satisfied while the DAG is traversed; and
 - identifying at least one matching subscriber if all the predicates of the matching subscriber are satisfied,wherein the DAG has a root node, one or more leaf nodes representing subscribers, and one or more non-leaf nodes representing the boolean tests which are formed by boolean connectors and wherein the step of creating further includes constructing the DAG in a top-down fashion so that common predicates shared by the subscribers are examined first and a minimal number of boolean tests are conducted to identify the matching subscribers.
2. (Cancelled)
3. (Original) The method of claim 2 further includes, when a new subscriber is added, adding the new predicates of the new subscriber to the DAG recursively starting from the root node, and adding a leaf node at any node in the DAG where the boolean test at the node is satisfied.
4. (Original) The method of claim 1 wherein each non-leaf node directs toward other leaf nodes or non-leaf nodes based on the results of the boolean test at the non-leaf node.
5. (Original) The method of claim 4 wherein the boolean test result is one of True, False, or Null.

6. (Original) The method of claim 1 wherein the boolean connectors are AND, OR, NOT and parenthesis.
7. (Original) The method of claim 1 wherein the predetermined predicate includes an atomic test, a disjunction of sub predicates, a conjunction of sub predicates, or a negation of a sub predicates.
8. (Original) A computer program for matching a published event with one or more subscribers in a content-based publish-subscribe system in a computer network, each subscriber having one or more predetermined predicates, the program comprising programs for:
 - creating in a top-down fashion a virtual Direct Acyclic Graph (DAG) including one or more arbitrary boolean tests representing the predetermined predicates so that common predicates shared by the subscribers are examined first and a minimum number of boolean tests are thus conducted to identify the matching subscriber;
 - eliminating, upon publishing the event, one or more subscribers wherein at least one of whose predicates is not satisfied while the DAG is traversed; and
 - identifying at least one matching subscriber if all the predicates of the matching subscriber are satisfied,
 - wherein the DAG has a root node, one or more leaf nodes representing subscribers, and one or more non-leaf nodes representing the boolean tests formed by boolean connectors.
9. (Original) The program of claim 8 wherein the program for creating further includes, when a new subscriber is added, adding the new predicates of the new subscriber to the DAG recursively starting from the root node, and adding a leaf node at any node in the DAG where the boolean test at the node is satisfied.

10. (Original) The program of claim 8 wherein each non-leaf node directs toward other leaf nodes or non-leaf nodes based on the test result at the non-leaf node.
11. (Original) The program of claim 10 wherein the test result is one of True, False, or Null.
12. (Original) The program of claim 8 wherein the boolean connectors are AND, OR, NOT and parenthesis.
13. (Original) The program of claim 8 wherein the predicate includes an atomic test, a disjunction of sub predicates, a conjunction of sub predicates, or a negation of a sub predicates.